

Remarks

Claims 27-30 have been amended to distinguish them over Broukhny (U.S. 6,077,285)

The examiner has rejected unamended claims as unpatentable over U.S. 6,077,285 (Broukhny) who shows and claims a tip for an ultrasonic horn having an asymmetrical cross section shown in Figure 5 of the cited patent.

The asymmetrical cross section shown by Broukhny is so called because it is not symmetrical about any axis drawn through its center. For example, if the axis is drawn vertically through its center, the left and right portions are not identical in shape.

In the present application, both a grooved circular and a rectangular cross-section are described on page 3 (second paragraph) and a rectangular cross section illustrates all drawings of the preferred embodiments (Figures 2-4). Rectangular sections are, by definition, symmetrical as they appear identical on either side of at least one axis drawn through their center. Grooved circular cross sections can be made that are also symmetrical by, for example, evenly spacing the grooves about the circular perimeter.

Broukhny specifically describes the utility of his invention as assisted by a asymmetrical cross section placed in the tip. He does not anticipate a resonator having a spiral inhomogenous portion whose cross-section is, infact, simply symmetric to produce longitudinal-torsional motion in a tip.

The applicant respectfully requests that a timely Notice of Allowance be issued in this case.

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